ACCOUNTABILITY FOR LEARNING – THE BEYOND MIRS PILOT PROJECT

Alberta Assessment Consortium
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The views presented in this paper are those of the authors and do not necessarily represent Alberta Learning or the school jurisdictions participating in the Beyond MIRS Pilot Project.

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Abstract

The development of the Management Information Reporting Schedules (MIRS) by the Alberta (Ministry of) Learning grew out of a need to obtain program evaluation information regarding the impacts on student achievement of targeted funding programs. The ad hoc nature of collecting a variety of program evaluation data through the MIR Schedules, however, imposed a significant reporting burden on schools and jurisdictions. Also, much of the isolated information was of questionable value for evaluative purposes, as most of the funded programs worked in concert with other factors to influence student outcomes. Therefore, a need was identified to develop a more efficient and integrated model of student achievement information that would meet a comprehensive set of information requirements at multiple levels of the education system, including the need to evaluate how well particular program interventions are working for subsets of the student population in response to student learning needs (e.g. ESL and programs for students with special needs). In spring 2003 Alberta Learning approved implementation of a pilot project to assess the viability and utility of including grade level of achievement data in the Ministry's Student Information System. The pilot project has provided some important insights into the benefits and risks of including classroom-based student assessment data in a provincial student database applied to a variety of program evaluation purposes. These insights are described in this paper to broaden awareness of the Beyond MIRS pilot project, particularly among Alberta teachers, and to stimulate further dialogue on this initiative.

BEYOND MIRS – New Directions for Program Evaluation

Background

Alberta Learning's Information Reporting Committee established a sub-committee in the fall of 2000 to consider alternative approaches to program evaluation. The MIRS Next Generation sub-committee was comprised of representatives from four school boards (Edmonton Public Schools, the Calgary Board of Education, Chinooks Edge School Division and Red Deer Catholic School District), and Alberta Learning managers from System Improvement and Reporting (SIR), Information and Strategic Services (ISS) and Basic Learning Divisions. The outcomes of the sub-committees deliberations were represented in the report, ***MIRS Next Generation: Design Principles for a Learner Results Database for Improved Program Evaluation***. The report was presented to and endorsed by the Information Reporting Committee on June 15, 2001, then tabled with Alberta Learning's Executive Team before being referred to Basic Learning for response. That response produced a revised paper, ***Beyond MIRS: New Directions for Program Evaluation,*** that detailed proposed a pilot project that was launched in September 2003 to assess the viability and utility of using classroom based student assessment data to evaluate programs such as English as a Second Language (ESL), programs for students with special needs, etc. This paper discusses the viability of the process as experienced by the participants in the pilot project (this included the original four school boards with the addition of Edmonton Catholic Schools and Golden Hills School Division), and presents some preliminary analysis regarding data utility.

Purposes of Program Evaluation

Alberta Learning's accountability model, implemented in 1996-97 under the statutory authority of the Government Accountability Act has required schools and school jurisdictions to report on the results achieved for specific groups of students such as ESL and students with special needs. In basic learning these programs range from early childhood to the end of grade 12. Alberta Learning provides funding for students with mild, moderate and severe learning disabilities, ESL instruction, and to better serve aboriginal students, hence there continues to be a need to evaluation the effectiveness of specially funded programs at multiple levels. Alberta Learning's information systems need to be able to organize and aggregate data on student outcomes in ways that can answer questions of how well these students learning needs are being met. Student information systems should have maximum utility for determining not only how student learning needs change over time, but also in defining what programs and intervention strategies are having the best impact and are working optimally to enhance student achievement.

Data Utility

The Beyond MIRS pilot establishes the foundation for providing Alberta Learning with a routine capacity to digitally collect and summarize classroom-based student achievement

information and relate it to programs or to monitor patterns of student learning needs and subsequent achievement. The Data Collection Initiative report (p.5) recommended that the framework of learner-centered accountability should strategically and effectively respond to qualitative and quantitative outcomes. Grade level of achievement data has the merit of being responsive to both quantitative and qualitative data as teachers judge students' levels of achievement based on a wide range of data and assessment information. Furthermore, Stiggins (2001: 24) notes that,

> "...we need to maintain a balanced perspective about assessment's valuable role at all levels [in the education system]. High quality classroom assessment serving its important users must be balanced with high quality standardized assessment serving its important users.

An important premise underlying the Beyond MIRS pilot project is that both classroom assessment and standardized assessment are complementary and both sources need to be given careful attention by all of the decision-makers in the education system, teachers, students, parents and policy makers. The evaluation requirements built into the accountability framework for the basic education system in Alberta and the related Annual Education Results Reports mean school boards must evaluate results achieved for all students, including those students with special needs. Although an annual process, these reporting requirements still involve considerable ad hoc evaluation, data generation and data analysis and thus have proven to be a challenge for school boards in meeting these comprehensive reporting requirements. Learner-focused data collection has the merit of being highly dynamic, permitting analysis of Language Arts or Mathematics achievement in relationship to many inputs or process variables of interest in relationship to student achievement outcomes. For example, a school or central office staff might want to determine if entry age or gender of students is related to student achievement in a specific context. These types of questions can be analyzed at the school, jurisdiction or provincial levels as an illustration of database usefulness.

An integrated database submitted via the Ministry's student information systems will add considerable value to decision making at multiple levels, from classrooms, to schools and school systems and at the provincial level while reducing ad hoc data collection and will point the way to a more balanced accountability model.

Quality Control

Inevitably questions of the validity and reliability of school-generated student achievement data must be addressed through a number of design features and quality control mechanisms. Firstly, by focusing on core curricular outcomes clearly defined and articulated in the Programs of Study, measurement is delimited to a set of universally applied learning objectives – a basic professional responsibility of Alberta teachers reinforced by existing policy (Alberta Learning, 2003: 95-96). Although the pilot project has demonstrated a need for capacity building in teachers' skill sets related to classroom assessment.

Secondly, by basing teacher judgment on a broad range and types of measures over time, the reliability of the assessment of student learning of curricular objectives is increased (Rogers, 1991: 181). Thirdly, it is expected that relatively strong positive correlations between teachers' judgment of their students' grade level of achievement and provincial achievement tests results will provide an indication of the quality of the school-based data. Recent analysis of the relationship between high school diploma exams and the school awarded marks demonstrate these correlations ranged from .36 to .81 with a mean correlation across all exam subjects of .62. Similar correlations will be established between k-9 grade level of achievement measures provided by teachers and provincial achievement test scores converted to grade level of acheivement equivalents, as a test of the concurrent validity of the grade level of achievement data. Preliminary results of this analysis are detailed in this paper, and additional analyses will be described in a subsequent technical paper about the pilot project.

The Case for Grade Level of Achievement Data – Psychometric Issues

The emphasis in program evaluation should be less on the inputs and the structure of inputs to student learning and more on the actual results of student learning. To do this effectively it is necessary to assess the effectiveness of instruction in the classroom, and hence to view the classroom as the basic unit of data generation.

Based largely on teachers' existing work, the Beyond MIRS Pilot Project asked the question, can the information produced by teachers routine assessment and annual reporting of students grade level of achievement in language arts and mathematics be compiled as meaningful data for school based, jurisdiction and Alberta Learning decision makers? Existing Alberta Learning policy in the ***Guide to Education*** reinforces this reporting requirement

> "Teachers shall ensure that information is effectively communicated to parents about… the grade level(s) the child has achieved in relation to the grade levels of the provincial programs of study…." (Alberta Learning, 2003: 95-96).

Accessing classroom based achievement data is a more relevant and meaningful way of assessing the effectiveness of the education system in meeting the learning outcomes of students. The focus is thus on student curricular achievement, while also permitting data aggregation relative to funded programs or typologies of student needs where these can be tracked to sub-sets of students. As noted in the ***Data Collection Initiative report*** (p. 26), "Accountability must be focused on the learner – if you collect the data and you can't apply it to help the learner, then why are you collecting [it]?"

An additional advantage of the proposed model of student achievement data lies in what it would contribute to the evolving professionalism underlying the Alberta accountability framework for basic education. As Reeves (2004: 107) states,

> ...the judgment of the classroom teacher is an integral part of constructive accountability....Only when accountability, standards, and assessment are fully integrated at the classroom level will we achieve the potential for fairness, equity of opportunity, and improved academic achievement that teaching professionals crave and society demands.

An integrated student achievement database would flesh out the data generated by the provincial achievement testing program with teacher-based assessment of student achievement and provide a much more dynamic, complete and enriched picture of student curricular-based learning while enhancing the professional role of teachers in this process. The proposed database should not represent a big leap over existing work that teachers do, but by creating a system to routinely collect and aggregate student grade level of achievement data some significant gaps in our knowledge about what is working for students can be illuminated.

Some students with severe disabilities do not study the graded curriculum, but have programs based on developing life skills. Data is also desirable for these students, but must be reported in unique ways. This has been recognized and is accounted for in the proposed data collection model developed by the Pilot Project Task Team. The pilot project has resulted in a refinement of the data fields and related descriptions of the data fields for all students. The proposed data collection format is presented in Appendix A.

The enrichment of data and refinement of student assessment processes does not happen immediately or automatically, without support, guidance and leadership by the whole network of basic education stakeholders. The Classroom Assessment Materials Project (CAMP) and the diagnostic reading and math materials previously developed by Alberta Learning or other formative, diagnostic assessment instruments would become more important support tools for teachers. With on-going professional development and leadership supports in the schools, the professional commitment and contribution to an integrated student database will grow stronger over time through linkages with related initiatives focused on improving classroom assessment as an important means for improving student learning. The pilot project has provided some key insights into these processes at the jurisdiction and school levels. These stories are highlighted next.

The Edmonton Public Schools (EPS) Story

The Edmonton Public School District is comprised of 213 schools with approximately 82,000 students and 5,300 certified staff. Its mission, as an advocate of school choice, is to ensure that all students achieve success in their individual programs of study. This is being accomplished "through exemplary staff performance, program diversity, measured student achievement of outcomes, and decentralized decision making."[1]

[1] Edmonton School District. http://www.epsb.ca/policy/ae.bp.shtml

Edmonton Public has been collecting Grade Level Achievement (GLA) data for about 8 years. An initial impetus for EPS to report GLA data was the observation that the information within the cumulative record was not always sufficient to give accurate grade level assessments, especially for students that had left the district (early leavers). Further, the *Guide to Education* states that all jurisdictions will let parents know the GLA of students in the core courses. As such, EPS made the decision to act on the *Guide* requirements (it was noted by several participants that this particular *Guide* requirement was not generally a widely known policy), and determined that at the end of each school year, teachers would report not only the performance score for students, but they would also relate that performance score to a GLA. One of the other, and perhaps biggest, factors that prompted the EPS move toward reporting GLA was the fact that students and parents needed clarification/interpretation of their records and they needed to know what grade level the student had achieved. A process based PD model was used to support implementation of the GLA requirement, with a strong emphasis placed on Principal PD supplemented by curriculum and instruction specialists who helped link good assessment with good instruction. Initially, there was a minor amount of resistance from teachers

At the same time, EPS also introduced a testing program called the Highest Level of Achievement Testing (HLAT), which consisted of a writing prompt and a reading test for all students in grades one to nine. The writing prompt was field-tested outside of their jurisdiction the year before they used it. It provides teachers with a resource of samples of writing at each grade level, and rubrics that range from limited to adequate, proficient, or excellent. Teachers administer the writing prompt, mark it, and then send it back. For each student the teacher provides a performance score, and a grade level of achievement. All of this information is warehoused in a centralized database for each student.

The Highest Level of Achievement Tests (HLATs) initiative was piloted in 1994-95 with 74 lead schools and went to the full district level the following year. It is now administered once a year, April – May, in Reading and Writing to all students in grades one through nine. Grade level of writing plus a level of proficiency rating ranges from one - four; therefore, criterion-referenced assessment data is available for writing in grades one - nine. A grade level of achievement score is also available for reading. EPS found that the vast majority of their students were working at grade level. It was this initiative that brought about significant awareness throughout the district of the concept of "grade level of achievement". Implementation has been incremental and iterative, relying to a degree on focus groups to help build support. They also noted that student voice was one of the most powerful tools to utilize as students have a compelling need to know their GLA. Likewise, parent voice was also a firm base of support.

EPS uses the outcomes from the Programs of Study to develop the achievement criteria for writing. Exemplars are identified for each level and included in a resource that is provided to support teacher's judgments of each student's GLA and performance level. The writing prompts are field-tested each year and the district conducts reliability checks by auditing HLAT results and GLA data for three students per classroom. Three names are randomly selected from every classroom where HLAT is administered and the teachers are asked to submit a copy of the student writing component. Then, EPS brings

in three teachers at each grade level and they work with a consultant either from Student Assessment or from Language Arts to conduct an audit. Essentially, they end up re-marking approximately 7000 pieces of writing (800 at each grade level). As one would suspect, the consistency has been improving. Over the past three years, there is a 94% match for GLA, and for GLA and performance there is an 81% match.

EPS found an additional use for their HLAT data. Alberta Learning currently provides EPS with information on school completers, which they take and match back to HLATs scores. Doing so has shown that there is a strong relationship between a student's chances of completing high school within that five-year timeframe and whether or not they are reading at grade level when they enter grade ten. Information that identifies students reading and/or writing below grade level who are pre-enrolled at a high school is now provided to staff before the school year starts allowing more timely program planning for the student.

EPS was a key participant in the Beyond MIRS pilot as they had a solid foundation already in place, and could serve as a valuable resource for the project. All of their schools with grades k through nine (170) are involved in the venture.

The Calgary Board of Education (CBE) Story

The Calgary Public School District is comprised of 221 schools with approximately 99,500 students and 5,900 certified staff. Their statement of vision states that they desire to be the dynamic learning community of choice, and provide quality learning opportunities and options[2].

CBE has two policies in place that are well aligned with the Beyond MIRS initiative. Firstly, CBE has a School Quality Review system that is closely linked to a planned program of instruction based on the program of studies and curriculum standards. Secondly, they are working on an elementary report card project.

The pilot project involved approximately 900 students in two schools, one elementary (K-6) and one junior high school (7-9). In both schools work on the purpose of classroom assessment and the connection to standards in the programs of study were part of the school's professional development. Discussions with the school administrators were held to build support for the project, but the school-based administrators ultimately controlled the decision to be part of the pilot project.

CBE held a pilot kick-off to provide background information on Beyond MIRS, explain the project to their participating schools, introduce the support team, and outline the task. They felt a support team was needed, as Beyond MIRS was an integrated project that would need the support of curriculum, assessment, technical and system reporting professionals. The team positioned the task of piloting Beyond MIRS as a program of discovery, and as a bottom-up model with their schools, which necessitated that teachers

[2] Calgary Board of Education. http://www.cbe.ab.ca

viewed it, and internalized it, as an important PD activity that added value to their assessment portfolios.

The Beyond MIRS project was summarized in one task, with one intent. The task was to "submit to Alberta Learning a grade level of achievement in Language Arts and Mathematics for all students" whereas the intent was to "develop broad-based assessment practices that instill confidence and validity to an end of the year grade level of achievement assessment of students". In order to accomplish these, they first focused on the assessment already in place and then built on that, with particular attention given to the role of "assessment for learning" (Stiggins, 2001). Next, curriculum support met with teachers and administration to assess needs, and develop assessment strategies, while the system reporting team members worked with Alberta Learning and the data vendors to put the data transfer protocols in place.

All in all the project is still very much viewed as a work in progress as the CBE pilot members realize that this is a collaborative effort that will likely improve with future iterations.

The Chinooks Edge Story

The Chinook's Edge School Division is comprised of 39 schools, serving approximately 11,000 students with 680 certified staff. Their vision states that they are committed to providing the best educational opportunities to students through:

1. Creating learning communities that focus on lifelong learning
2. Providing choices and involvement for all stakeholders
3. Being open to proven educational innovations that have merit for our students
4. Continued evaluation of personnel and programs to ensure that Chinook's Edge is efficient and effective

Of additional note, one of the divisional values is that of risk taking. They claim that change is a constant to which they must respond and adapt, and it is therefore necessary to take risks[3].

They were able to commit the grade one to eight teachers from one k - 12 school, to the project. Like the other jurisdictions, they too had previously done a lot of work on assessment prior to Beyond MIRS.

Administrators at the participating school brought in an assessment professional to do a workshop on writing, and grade level achievement rubrics. They successfully developed grade level of achievement rubrics for writing, and managed to link their reading assessment work to an existing Alberta Initiative for School Improvement project.

[3] Chinook's Edge School Division. http://www.chinooksedge.ab.ca

One of the key elements for success in Chinook's Edge was the fact that the school administration bought into the project, and was very supportive. On the basis of the experience with the pilot school's Beyond MIRS project, it was decided to try and develop a GLA rubric for grade five reading at a district level. Additionally, they noted that two principals in particular became the champions of the initiative, and took it upon themselves to ensure that nearly every school that had grade five teachers, in the district, save three, attended an assessment and rubric workshop. Based on that success, further assessment projects will be undertaken next year involving more schools.

Needless to say, the project has been very grassroots driven in Chinook's Edge.

The Red Deer Catholic (RDC) Story

Red Deer Catholic has fourteen schools, approximately 5,500 students, and 320 certified staff. Their mission statement reads, "Inspired by Christ and aspiring to excellence"[4].

RDC involved one dual track k-9 school that had an instructional focus on writing and comprehension. Their first task was to strike a committee known as the Assessment for Learning Group, which met once a month (and continue to meet) to deal specifically with developing assessment tools.

RDC used the Edmonton Public Schools HLAT as an organizing model and worked closely with their Language Arts teachers to focus on specific items of the Program of Studies. They worked directly with both Edmonton Public and Chinook's edge to share ideas, and find out what others were doing. They then went on to develop models and exemplars, and engaged in extensive PD with their teachers. RDC noted that their approach to the Beyond MIRS project was very teacher driven. However, this is not to say they dismissed the key role of administrators. In fact, they also had a three-day retreat for administrators that focused very specifically on the concepts of assessment for learning. They incorporated this focus in the jurisdiction three-year education plan, and schools will now have to report on what they are doing toward assessment for learning.

The Edmonton Catholic Schools (ECS) Story

Edmonton Catholic has 83 schools, approximately 31,000 students and 1,700 staff. They place a strong emphasis on the centrality of a strong learning and teaching focus within a Catholic context resulting in the optimizing of human potential for students in their trust[5].

Edmonton Catholic also has an Assessment *for* Learning Initiative, which began in 1998 as a district project. Their goal at that time was to help schools develop the capacity they needed to manage and implement change to enhance student learning. Today, their Assessment *for* Learning Initiative promotes an on-going awareness and development of assessment literacy, effective instructional strategies and useful planning practices for

[4] Red Deer Catholic Regional Division. http://www.rdcrd.ab.ca
[5] Edmonton Catholic Separate School District. http://www.ecsd.net

teachers. Some topics they've focused on to date are enhancing student learning through portfolio assessment, student self-assessment and grading practices.

The initiative provides extensive training and support for school-based leadership teams through a series of professional development sessions that are coherently conceptualized and delivered. In short, Assessment *for* Learning supports the foundations of collaborative sharing through professional learning communities. Despite the fact that this level of assessment awareness seemed like an obvious fit for the Beyond MIRS project, they nearly had to withdraw.

Edmonton Catholic Schools originally intended to couple Beyond MIRS with the development of a web-based report card; however the task became too onerous. At that time, two principals who were not piloting the new report card, nor involved with Beyond MIRS, became interested and asked to become participants.

The district's Beyond MIRS "team" consequently met with teachers on an ongoing basis to determine how to assess grade level of achievement, and worked to frame curriculum concepts, aspiring to build assessment tools around those. They are still attempting to combine some of the work with other projects to keep the workload manageable.

Edmonton Catholic described their involvement with Beyond MIRS as a project of discovery for their teachers.

The Golden Hills Story

Golden Hills School Division has 40 schools, approximately 6,700 students, and around 475 certified staff. Historically, the division was three separate jurisdictions that were combined in 1995 to form one large geographical area. Their mission statement reflects this range as they strive to build on the strengths of the people in their school system in order to provide programs that meet the diverse needs of their students[6].

Golden Hills committed nine schools to the pilot. Given this ambitious scope, a decision was made at the Division level to proceed with a two-year implementation plan, rather than the one-year implementation plan used within other pilot divisions. This extension of the implementation period provided the time needed to permit coordinated training for and consultation between teachers from a number of different schools. As a result, the prerequisites needed for the generation of grade level achievement data will not be in place within Golden Hills until July 2005.

Golden Hills' story is similar to that of Chinook's Edge as the initial focus of the project has been primarily on writing. Working with Edmonton Public, two representatives from each of the nine participating schools have been trained in the use of The Highest Level of Achievement Tests (HLATs). These representatives have subsequently served as

[6] Golden Hills School Division. http://www.ghsd75.com

assessment specialists, providing training and support in using the HLATs to identify grade levels of achievement in writing for students within their respective schools.

Within the 2004-2005 school year, the initial work with the HLATs will form the basis for a broader discussion of and further work towards the routine collection and aggregation of student grade level of achievement data in language arts and mathematics. Schools are invited to be involved in those parts of the pilot which are of interest to their school staff and/or that align with other initiatives or projects currently being undertaken, e.g., Alberta Initiative for School Improvement (AISI) projects, Assessment Specialist Initiative, professional learning communities.

The task of generating grade levels of achievement based on broad-based teacher assessment practices and measures is viewed within Golden Hills as a process. Even after a general framework is devised that outlines a broad range and types of measures, the work of supporting classroom-based decision-making is viewed as both ongoing and continuous.

Lessons Learned About Collecting GLA at a Classroom Level for Provincial Reporting/Key Themes

Initially, it was hoped that the various stories could be neatly synthesized into sections resulting in a checklist of sorts that could act as a how-to guide to implementing classroom student GLA for reporting at a provincial level. However, these stories suggest that easy solutions to difficult processes are elusive, and no one best way to do classroom assessment exists. In hindsight this seems obvious as multiple variables impact the ability of various schools and jurisdictions to implement a standardized GLA model in the core subjects, ranging from existing assessment knowledge, capacity issues, teacher and administrator buy-in, methodological issues, value assumptions, political implications, and of course PD facility (to name a few). Nonetheless, it is possible to outline rough signposts based on the Beyond MIRS pilot, by which jurisdictions may mark their GLA journey, and points to consider when any jurisdiction begins to implement GLA policies.

First and foremost, it is vital that the implementation be a combination of top down and bottom up. Beyond MIRS is an outstanding exemplar of implementing a specific policy (reporting students' GLA) for the sole purpose of solving a specific problem, before those who would benefit most (students, parents and teachers) realize a problem exists. An analogy here might be the development of the computer. Originally, computers were massive and complex machines that did little more than mathematics, which were developed for the most part as a technical endeavor with military applications. It was long after their initial development that people began to view them as having a much broader range of applications including use in classrooms. GLA is likewise an incredibly important tool that must be properly attached to existing classroom teachers' professional tool-boxes and viewed as a useful device for both classroom based decision-making and for decision making by policy makers at the school board and provincial levels.

Realistically, the task of demonstrating the value of GLA to education professionals is not that difficult. At the root of collecting and reporting GLA is the notion of accountability, and generally when accountability in an educational context is discussed it is often in concert with the notion of standardized testing. However, standardized testing is only one piece of the accountability puzzle and although it can be an important tool, it is only a snapshot of a student's academic ability, and does very little by itself to address their social and or psychological well-being. Indeed, teachers often feel concern about the degree to which standardized achievement tests reflect the reality they view in the classrooms, and consequently teachers may see benefits to have their assessments also become part of the public discourse (Burger and Kruger, 2003). The Beyond MIRS pilot tapped into a willingness among education professionals to embrace the opportunity to relate classroom GLA to a boarder context. Perhaps we were witnessing here what Amanda Sinclair (cited in Burger, et. al. (2002) has discussed as the merging of personal and professional accountability with the political, public and managerial forms of accountability to create a new generation of accountability owned by classroom teachers and school administrators.

However, it was also apparent in the Beyond MIRS pilot that there was a degree of apprehension in regards to reporting GLA, presumably because teachers in the pilot jurisdictions felt somewhat vulnerable concerning being made accountable for their assessments. Such a sentiment is likely to be expected; however it should not be allowed to paralyze the process. As Stiggins (2001:62) comments,

> We would be naïve if we failed to acknowledge that the clear and public definition of achievement expectations carries with it potential risks for teaches. Accountability is a double-edged sword.... If I succeed as a teacher and my students hit the target, I want an acknowledgement of that success. If my students fail to hit the target I want to know why my students might not have learned.... Only when I know what went wrong can I make the kinds of decisions and take the kinds of action that will promote success.

In the participating jurisdictions there seemed to be individuals willing to act as policy entrepreneurs who were prepared to become advocates, and convince others in their professional communities that there was merit in the process. The policy entrepreneur's role may simply be a matter of reassuring teachers that the type of accountability Beyond MIRS seeks to serve is not teacher accountability, but learner-centered accountability in order to serve the students' needs; and the risks in being more open are not restricted to teachers. As Stiggins (2001: 371)notes, "Let's not be so naïve as to think that only teachers face this kind of risk [of open accountability]. It reaches all levels of educational responsibility." Further, teachers may see this as an opportunity to boost their professionalism and confidence, as they are the ones directly in control of the accountability indicators in such a model (Reeves: 2004).

In short, the main themes that emerged to date from the Beyond MIRS pilot were:

1. Implementing a process for collecting GLA works best when it is related to existing classroom assessment and school improvement work. The reasons for this seem to be:
    a. Teachers do not need more work to do, and if it seems like that is what it will be, the chance of getting buy-in will be minimal. Rather, they need to view it as an important aspect of work they are already undertaking.
    b. If attached to existing assessment work, there seems to be a pre-existing value for the role of assessment as a formative tool that improves teaching and learning outcomes. Teachers will be more likely to see the worth of GLA if they already value the role of assessment as a formative process that ultimately drives improvement in the summative side of classroom assessment.
    c. If it is attached to existing work, it does not seem imposed. There is an intrinsic value to letting people discover and internalize the value of good, well-balanced assessment tools, and the benefits they confer.

2. The role of policy entrepreneurs at multiple levels is vital. Simply agreeing to do it does not mean it will be successful. First, it takes people who believe in a project like this, and are willing to act as advocates and go into the schools to sell the idea. Having individuals in jurisdictions that are willing to work with their professional learning communities and see the opportunities rather than the risks associated with reporting GLA, helps mitigate the anxieties some may have regarding accountability.

3. Even if people agree to initially become part of the process; it may not be a success if assessment expertise and some positive reinforcements are not available at the school level. In order to be a success, champions of "assessment for learning" (Stiggins, 2001) must network and communicate actively from start to finish. Implementation of revised student information system data can be aligned synergistically with a variety of existing professional development and action research initiatives in schools and school jurisdictions.

4. Grassroots buy in is necessary. It seems to work best as a top down/bottom up model with maximum opportunities for teacher participation and ownership of the classroom assessment process, facilitated and aided by committed and visionary school and central office administration.

5. Similarly, individual teachers in the classrooms have to see the benefits of collegial networking and discussions of how to best judge a student's grade level of achievement. They must also feel that the value of the data within a critical reflection context outweighs some of the possible risks (i.e. being held accountable in isolation from system accountability). In may ways, the pilot project was perceived as a collaborative model of exchanging student achievement data with schools, congruent with a more interactive and collaborative model of accountability.

6. Nobody works in isolation and nobody expects to be perfect. The pilot jurisdictions seemed to be of the opinion that they would benefit from the Beyond MIRS project, but also viewed it as a foundational and iterative step towards GLA data generation in support of broad-based improvement and reporting strategies. In other words, many viewed it as a project of discovery, or an initial stage of a process that will undoubtedly be refined as it evolves. It is vital that jurisdictions do not feel they can simply implement the policy and immediately reap the benefits. The pilot jurisdictions largely felt it is a process that needs cultivation and encouragement over time in order to see the full-range of positive impacts. Furthermore jurisdiction staff were willing to show a degree of vulnerability in agreeing to participate in the pilot and in sometimes asking other jurisdiction staff for help.

7. From a technical perspective a number of issues were addressed and resolved:
    a. Building database changes into the supporting data management software used by jurisdictions is a manageable process, largely facilitated by implementation of the Alberta Supernet.
    b. Student data and protection of personal privacy in database design and maintenance was addressed via a privacy scan report. Grade Level of Achievement data fall well within the mandate of Alberta Learning and program evaluation is a consistent use of this information.

As was stated earlier, this paper is intended to address the question of whether or not the collection of GLA classroom data for reporting at a provincial level is a viable, and presumably laudable endeavor. At this stage, it would seem that the answer is a qualified, "yes" given the synergy created around the development of a more balanced model of accountability premised on formative classroom assessment as a key driver for gains in summative assessments. However, what remains to be addressed are issues pertaining to the data utility such as:

1. How quickly and with what level of support can all teachers accurately and validly judge their students grade level of achievement relative to the learning outcomes in the programs of study?
2. Can Grade Level of Achievement data driven by formative classroom assessment methods be a reasonable approach, with acceptable concurrent and predictive validity, for generating data for judging program impacts?
3. Do new data requests based on Grade Level of Achievement add value to student reporting mechanisms already in place in schools and support related processes of critical reflection at the classroom and school levels, and does GLA aid in designing revisions to the jurisdiction and provincial student information systems?

The authors of this paper feel that with continued wise implementation strategies, the answer to the above questions will be "yes." However, the concurrent and predictive

validity and reliability of the data will need to be demonstrated. The following section discusses these issues and presents some preliminary results of these tests.

Pilot GLA Data Validity and Reliability

The above discussion provides some important insights into the benefits and risks of including classroom based student assessment data in a provincial student database. However, what remains to be demonstrated are issues pertaining to the data validity, reliability and utility, specifically, can Grade Level of Achievement (GLA) data, driven by formative classroom assessment methods, be an effective approach to generating data for judging program impacts?

To address this question, the following analyses will be undertaken.

1. GLA by Chronological Age, compared to PAT by Chronological Age.
2. GLA by PAT (and by selected sub-sets such as excused and absent, acceptable and excellent levels, exceptional codes, and ESL.
3. GLA by enrolled grade (and by selected sub-sets such as above)

Data fields from the Student Information system to be included in these analyses include the following:

- ASN (for verification and matching purposes only)
- Birth date
- Enrollment type
- Exceptional codes
- Gender
- Grade
- Grant codes (specifically ESL funded-301, and ESL non-funded 302)
- Registration date
- Registration entry status

Data analysis will be carried out by way of cross tabulations, Chi-square, Spearman's rank order correlations and if applicable, Pearson ppm correlations with tests of statistical significance where relevant. Most of these analyses will be reported in a subsequent technical report, however, some preliminary analysis is reported below.

Preliminary Data Analysis

Four of the six pilot school boards submitted data in time to review the usefulness of the data for program evaluation purposes. A total of 51,815 student records were received from the pilot jurisdictions for this analysis. An initial question addressed is, does GLA data demonstrate discrimination between enrolled grade and GLA for the entire pilot student population and for sub-groups of the pilot cohort group. Data was aggregated for all students, for all non-coded students, for coded students with severe disabilities, for

students coded with mild/moderate disability and for students coded as gifted and talented. The percent of students in each of the sub-group categories is presented in Figure 1. This data mirrors the expected frequency distributions for students with special needs totaling between 10 and 12 percent.

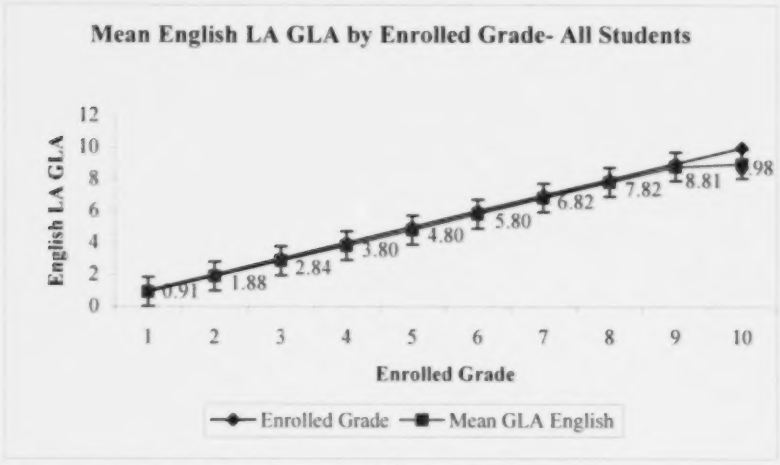
Figure 1 – Percent of Students by sub-groups.

Sub-Groups - Population Parameters

	Frequency	Percent
Non-Coded	**46061**	**88.89%**
Severe Disabilities (Code 40 thru 49)	**1080**	**2.08%**
Mild/Moderate Disabilities	**4066**	**7.85%**
Gifted and Talented	**609**	**1.18%**
Total	**51816**	**100%**

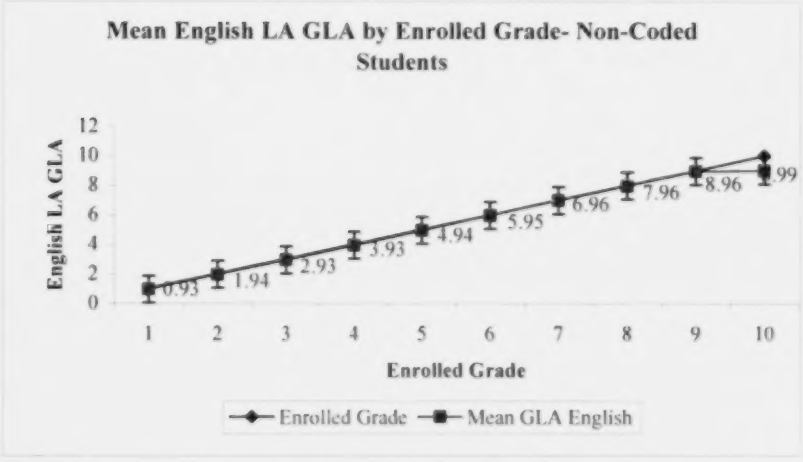
The frequency distributions of GLA in relationship to enrolled grade for the entire pilot cohort and for sub-groups are provided in Appendix B. The data is graphically presented in Figures 2-6 below and it can be easily seen that the data does discriminate between the whole cohort and the students with mild/moderate and severe special needs. While the GLA data, as expected, does depart from a close correspondence to enrolled grade for students with mild/moderate or severe special needs, students coded as gifted and talented do not demonstrate GLA above their enrolled grade. This is likely explained by these students being on enrichment programming at their enrolled grade level as opposed to being accelerated to a higher grade-level program. This could well be an area for further inquiry.

Figure 2 - All Students- Entire Beyond MIRS Database ENGLISH LA GLA



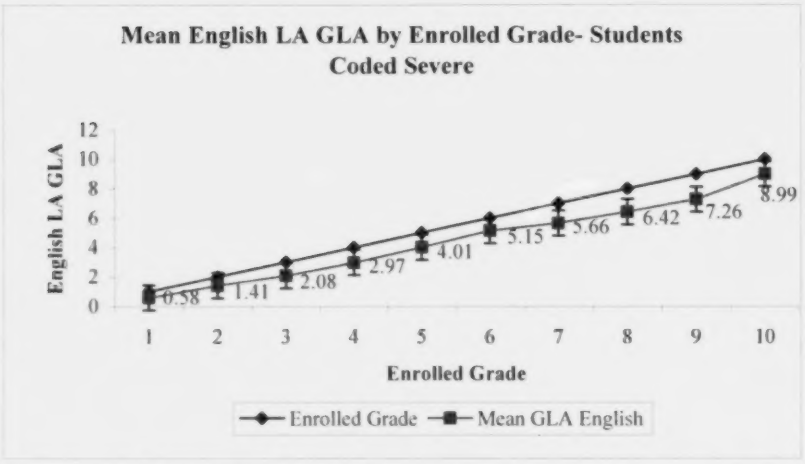
Above mean GLA line is y = 0.9546x + 0.0435
Formula for line is y = bx + a

Figure 3 - Non-Coded Students



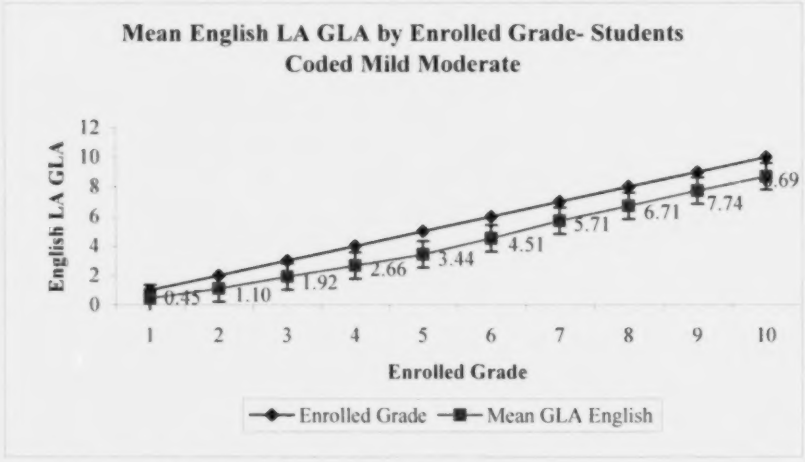
Above mean GLA line is y = .9512x + 0.1175

Figure 4 - Students with Severe Codes



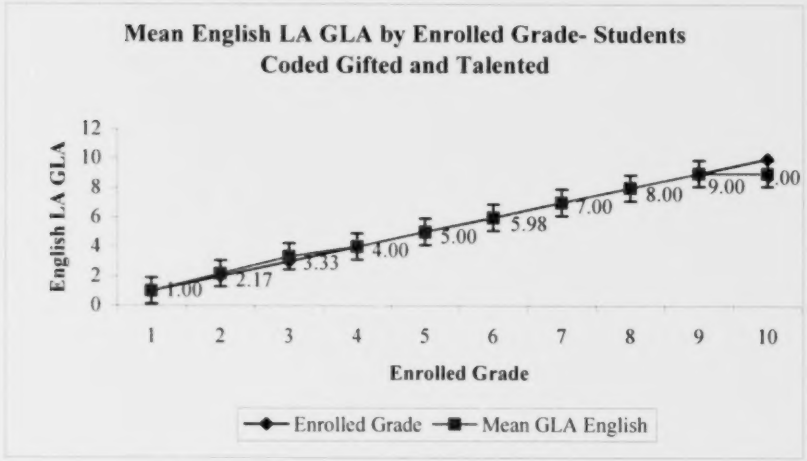
Above mean GLA line is y = .8946x - 0.465

Figure 5 - Students with Mild Moderate Codes



Above mean GLA line is y = .9385x - 0.8692

Figure 6 - Gifted and Talented Students



Above mean GLA line is y = .9281x + 0.3429

The relationship between enrolled grade and GLA was also analyzed by considering the correlations for sub-groups of students as well. It was hypothesized that the correlations should be highest for non-coded students and weakest for coded students. These values, based on Spearman Rank Order correlations are detailed in Figure 7 and the obtained correlation values support the initially hypothesized relationships.

Figure 7 - Correlations Between English LA GLA and Enrolled Grade by Sub-Groups of the Population- Spearman's rho

Recoded Expanded codes into groups	*Correlation Coefficient*
Non-Coded	**.992(**)**
Severe Disabilities (Code 40 thru 49)	**.788(**)**
Mild/Moderate Disabilities	**.852(**)**
Gifted and Talented	**.999(**)**

**** Correlation is significant at the 0.01 level (2-tailed)**

As noted on page 15 additional analyses of the data will be carried out to further assess the concurrent and predictive validity of the GLA data. The results of these analyses will be reported in a future technical report on the Beyond MIRS Pilot data.

Next Steps

In addition to the self-assessment of the Beyond MIRS pilot project by project participants discussed above, a formal, objective evaluation of the project is being completed by the System Improvement and Reporting Division of Alberta Learning to consider if Beyond MIRS should be expanded to a province-wide implementation, and if so, under what timelines and what supports. This report is in process.

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Appendix A

Student Grade Level of Achievement Form

_____ School District

_____ School

School Code: _____

2003-04 School Year

Purpose: **Alberta Learning is collecting information on students' grade level of achievement to supplement provincial achievement test data in order to have more comprehensive, accurate and valid information on student achievement. This data will better inform program evaluation needs at provincial, jurisdiction and school levels.**

Directions - **Please complete this form for each student in your Language Arts and/or Math classroom by the end of the school year as defined by the traditional or alternative school calendar. Submit the data requested on this form to your school office either in hard copy or electronically for transmission to Alberta Learning.** (See definition of terms denoted with an "*" on reverse)

Part A

Student Surname: _____

Student Given Names: _____

Alberta Student Number _____

*Enrolled Grade _____

PART B ** Grade Level of Achievement (GLA) applies to all students on graded curriculum, including those with special needs

GLA **in English Language Arts: _____**

If applicable (FL1 or FL2 students) - GLA **in French Language Arts: _____**
Grade English Language Arts is introduced _____

GLA **in Mathematics: _____**

PART C *** For students not on a graded curriculum i.e. not based on the Programs of Study, please check the description that best describes the goals in the student's Individualized Program Plan (IPP) that have been met. (Indicate whether goals are met or not with "YES", "NO" or not applicable "N/A.")

_____ **Student has met IPP goals and objectives that address** communication skills.

_____ **Student has met IPP goals and objectives that address** functional skills.

Communication Skills – **refers to the development of expressive and or receptive communication. This may be verbal communication and/or alternative modes of communication.**

Functional Skills –**refers to skills that will assist the student in developing independence in the home, school and community.**

Explanation of Terms

*Enrolled Grade – is the grade to which the student is assigned. Typically there is a strong relationship between a student's age, peer group and enrolled grade.

Grade Level of Achievement – **this is the grade level defined as a whole number in relationship to the learning outcomes defined in the Program of Studies **that you judge the student has achieved at the end of the current school year,** for Language Arts and Mathematics. **For example:**

- if the student is in Grade 1 and, if you judge that as of the end of the current school year he/she has met the learning outcomes in the Program of Studies for grade 1 Language Arts you would indicate "achieved grade 1"; and if you judge the student has not met the learning objectives in Math you would indicate "not yet 1."
- if the student is in Grade 1 and is performing above grade level, record the grade level at which you judge the student is performing, e.g. "achieved grade 3."
- For students in FL1 programs (students entitled under Section 23 of the Charter of Rights and Freedom to enroll in French first language schools) and in FL2 (French Immersion programs) report both a grade level of achievement for the student's French Language Arts program, and for their English Language Arts program at the end of the year that English Language Arts instruction is initiated (may range from grade 1 to 3).
- For students in FL1 and in FL2 programs report a single grade level of achievement for Mathematics independent of the language of Math instruction.

NOTE: In some school boards, there is a standard test or battery of tests used to determine grade level of achievement – if that is true for your board, consider that assessment in relationship to the full range of assessment information available to you, including classroom assessment marks, in making a professional judgment of the student's grade level of achievement.

***Not on Graded Curriculum – **means the** student's program is restricted to learning outcomes that are significantly different from the provincial curriculum defined in the Program of Studies **and are specifically selected to meet the student's special needs as defined in the *Standards for Special Education* (2002).**

Illustrative Examples:

Student A is enrolled in grade 4. Her Language Arts program is based on the grade 4 learning outcomes defined in the English Language Arts k-9 Program of Studies. The full range of assessment results for Student A demonstrates she has achieved the outcomes for grade 4 so the data is entered, "achieved grade 4."

Student B is enrolled in grade 8. He has been coded as having a mild learning disability. His Math program is based on the grade 6 learning outcomes defined in the Math k-9 Program of Studies. The full range of assessment results for Student B demonstrates he has achieved the outcomes for grade 6 so the data is entered, "achieved grade 6."

Student C is enrolled in grade 2. He has been coded as having a severe learning disability. His Language Arts program is based on developing language arts readiness skills and on some of the grade 1 learning outcomes defined in the English Language Arts k-9 Program of Studies. The full range of assessment results for Student C demonstrates he has not achieved all of the learning outcomes for grade 1 so the data is entered, "not yet 1."

Student D is enrolled in grade 3. She has been coded as having multiple severe disabilities and works with a full time aide. Her program is based completely on learning objectives that are below the grade 1 learning outcomes defined in

the Math or English Language Arts k-9 Program of Studies. Her Individualized Program Plan defines communication and functional skill outcomes designed to develop independent living skills. All of the IPP outcomes for the current school year have been achieved so the data is entered in Part C, "Yes" for both communication and functional skills.

Notes for Data transmission design team

Data Format – **The actual data collection format might look like the following:**

Field Name	Type	Characters	Example
Student Surname	**Alpha**	**25**	**Smith**
Student Given Names	**Alpha**	**25**	**Jonathan James**
Alberta Student Number	**Nominal**	**9**	**012345678**
Enrolled Grade	**Nominal**	**2**	**03**
Grade Level of Achievement – Language Arts	**Interval**	**2**	**04**
If applicable - GLA in French Language Arts	**Interval**	**2**	**04**
If above row active – grade level ELA in introduced	**Nominal**	**2**	**01**
Grade Level of Achievement – Mathematics	**Interval**	**2**	**03**
If Modified Program - IPP Results – Communication	**Nominal**	**1**	**Yes = 2, No = 1, N/A = 0**
IF Modified Program - IPP Results – Functional	**Nominal**	**1**	**Yes = 2, No = 1, N/A = 0**
Optional fields for local use – not submitted to Alberta Learning			

Data transmission note: A student list by school will be generated by Alberta Learning from the Student Information System and sent to jurisdiction central offices in early March. An option for adding new students and assigning new ASN's will be provided for.

File formats can be either a "flat file" in ascii format or an Excel spreadsheet format. In late June files are sent from the schools to the central office for compilation prior to transmission via Edulink to Alberta Learning by mid July.

Appendix B – GLA Frequency Distributions

In the following Tables,
N1= Not Yet at Grade 1 Level
XX= No information or blank.

All Students- Entire Beyond MIRS Database ENGLISH LA GLA

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
1	Valid	01	4484	85.8
		02	7	.1
		03	1	.0
		N1	475	9.1
		XX	261	5.0
		Total	5228	100.0
2	Valid	01	403	7.5
		02	4817	89.5
		03	8	.1
		N1	110	2.0
		XX	47	.9
		Total	5385	100.0
3	Valid	01	178	3.2
		02	392	7.1
		03	4921	88.5
		N1	45	.8
		XX	16	.3
		04	6	.1
		05	1	.0
		Total	5559	100.0
4	Valid	01	93	1.6
		02	177	3.1
		03	384	6.8
		N1	25	.4
		XX	41	.7
		04	4936	87.2
		05	3	.1
		06	1	.0
		BB	1	.0
		Total	5661	100.0
5	Valid	01	42	.7
		02	102	1.8
		03	181	3.2
		N1	6	.1
		XX	34	.6
		04	296	5.2
		05	5042	88.3
		06	6	.1
		BB	2	.0
		Total	5711	100.0

6	Valid	01	15	.3
		02	55	.9
		03	86	1.5
		N1	4	.1
		XX	41	.7
		04	154	2.6
		05	279	4.8
		06	5196	89.1
		07	1	.0
		Total	5831	100.0
7	Valid	01	5	.1
		02	19	.3
		03	51	.8
		N1	18	.3
		XX	121	1.9
		04	78	1.2
		05	121	1.9
		06	162	2.6
		07	5697	90.8
		Total	6272	100.0
8	Valid	01	9	.1
		02	13	.2
		03	31	.5
		N1	12	.2
		XX	56	.9
		04	45	.7
		05	71	1.2
		06	75	1.2
		07	131	2.1
		08	5652	92.7
		09	4	.1
		Total	6099	100.0
9	Valid	01	5	.1
		02	4	.1
		03	12	.2
		N1	11	.2
		XX	110	2.1
		04	26	.5
		05	43	.8
		06	59	1.1
		07	81	1.5
		08	120	2.3
		09	4821	91.1
		Total	5292	100.0
10	Valid	XX	20	2.6
		06	2	.3
		07	2	.3
		08	6	.8
		09	748	96.1
		Total	778	100.0

Non-Coded Students

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
01	Valid	01	4355	87.8
		02	7	.1
		03	1	.0
		N1	342	6.9
		XX	256	5.2
		Total	4961	100.0
02	Valid	01	252	5.1
		02	4641	93.4
		03	7	.1
		N1	23	.5
		XX	44	.9
		Total	4967	100.0
03	Valid	01	53	1.1
		02	238	4.7
		03	4725	93.8
		N1	4	.1
		XX	14	.3
		04	6	.1
		Total	5040	100.0
04	Valid	01	14	.3
		02	43	.9
		03	215	4.3
		N1	4	.1
		XX	20	.4
		04	4712	94.0
		05	2	.0
		06	1	.0
		Total	5011	100.0
05	Valid	01	5	.1
		02	16	.3
		03	39	.8
		XX	8	.2
		04	169	3.4
		05	4791	95.2
		06	6	.1
		Total	5034	100.0
06	Valid	01	4	.1
		02	6	.1
		03	8	.2
		N1	1	.0
		XX	20	.4
		04	27	.5
		05	115	2.3
		06	4868	96.4
		07	1	.0

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
		Total	**5050**	**100.0**
07	**Valid**	**01**	**1**	**.0**
		02	**3**	**.1**
		03	**7**	**.1**
		N1	**12**	**.2**
		XX	**80**	**1.5**
		04	**6**	**.1**
		05	**12**	**.2**
		06	**54**	**1.0**
		07	**5276**	**96.8**
		Total	**5451**	**100.0**
08	**Valid**	**01**	**2**	**.0**
		02	**1**	**.0**
		03	**6**	**.1**
		N1	**3**	**.1**
		XX	**43**	**.8**
		04	**8**	**.2**
		05	**7**	**.1**
		06	**12**	**.2**
		07	**63**	**1.2**
		08	**5150**	**97.2**
		09	**3**	**.1**
		Total	**5298**	**100.0**
09	**Valid**	**02**	**1**	**.0**
		03	**2**	**.0**
		N1	**2**	**.0**
		XX	**87**	**1.9**
		04	**1**	**.0**
		05	**5**	**.1**
		06	**9**	**.2**
		07	**13**	**.3**
		08	**55**	**1.2**
		09	**4333**	**96.1**
		Total	**4508**	**100.0**
10	**Valid**	**XX**	**17**	**2.3**
		06	**1**	**.1**
		08	**4**	**.5**
		09	**719**	**97.0**
		Total	**741**	**100.0**

Students with Severe Codes

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
01	Valid	01	45	57.7
		N1	32	41.0
		XX	1	1.3
		Total	78	100.0
02	Valid	01	36	25.9
		N1	23	16.5
		02	80	57.6
		Total	139	100.0
03	Valid	01	33	22.4
		N1	13	8.8
		XX	1	.7
		02	29	19.7
		03	71	48.3
		Total	147	100.0
04	Valid	01	13	10.7
		N1	4	3.3
		XX	4	3.3
		02	23	18.9
		03	19	15.6
		04	58	47.5
		BB	1	.8
		Total	122	100.0
05	Valid	01	6	4.7
		N1	3	2.4
		XX	1	.8
		02	12	9.4
		03	16	12.6
		04	16	12.6
		BB	2	1.6
		05	71	55.9
		Total	127	100.0
06	Valid	01	2	1.4
		N1	1	.7
		XX	6	4.3
		02	7	5.0
		03	9	6.4
		04	14	10.0
		05	15	10.7
		06	86	61.4
		Total	140	100.0
07	Valid	N1	6	5.0
		XX	5	4.1
		02	3	2.5
		03	5	4.1
		04	9	7.4
		05	13	10.7
		06	26	21.5

Enrolled Grade	English LA Grade Level of Achievement		Frequency	Percent
		07	54	44.6
		Total	121	100.0
08	Valid	01	2	2.0
		N1	8	8.0
		XX	1	1.0
		02	1	1.0
		03	4	4.0
		04	2	2.0
		05	4	4.0
		06	10	10.0
		07	13	13.0
		08	54	54.0
		09	1	1.0
		Total	100	100.0
09	Valid	01	1	1.0
		N1	8	7.8
		XX	3	2.9
		03	3	2.9
		04	3	2.9
		06	5	4.9
		07	14	13.7
		08	16	15.7
		09	49	48.0
		Total	102	100.0
10	Valid	09	4	100.0

Students with Mild/Moderate Codes

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
1	Valid	01	81	43.5
		N1	101	54.3
		XX	4	2.2
		Total	186	100.0
2	Valid	01	115	42.1
		N1	64	23.4
		XX	3	1.1
		02	91	33.3
		Total	273	100.0
3	Valid	01	92	25.1
		N1	28	7.7
		XX	1	.3
		02	125	34.2
		03	120	32.8
		Total	366	100.0
4	Valid	01	66	13.4
		N1	17	3.5
		XX	17	3.5
		02	111	22.6
		03	150	30.5
		04	129	26.3
		05	1	.2
		Total	491	100.0
5	Valid	01	31	6.3
		N1	3	.6
		XX	25	5.1
		02	74	15.1
		03	126	25.8
		04	111	22.7
		05	119	24.3
		Total	489	100.0
6	Valid	01	9	1.6
		N1	2	.4
		XX	15	2.7
		02	42	7.6
		03	69	12.4
		04	112	20.1
		05	149	26.8
		06	158	28.4
		Total	556	100.0
7	Valid	01	4	.7
		XX	35	6.0
		02	13	2.2
		03	39	6.7
		04	63	10.8
		05	96	16.5
		06	82	14.1
		07	250	43.0
		Total	582	100.0
8	Valid	01	5	.9
		N1	1	.2

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
		XX	10	1.8
		02	11	2.0
		03	21	3.8
		04	35	6.4
		05	60	10.9
		06	53	9.6
		07	55	10.0
		08	299	54.4
		Total	550	100.0
9	Valid	01	4	.7
		N1	1	.2
		XX	19	3.5
		02	3	.6
		03	7	1.3
		04	22	4.1
		05	38	7.0
		06	45	8.3
		07	54	10.0
		08	49	9.1
		09	299	55.3
		Total	541	100.0
10	Valid	XX	3	9.4
		06	1	3.1
		07	2	6.3
		08	2	6.3
		09	24	75.0
		Total	32	100.0

Students with Gifted and Talented Codes

Enrolled Grade	*English LA Grade Level of Achievement*		*Frequency*	*Percent*
01	Valid	01	3	100.0
02	Valid	02	5	83.3
		03	1	16.7
		Total	6	100.0
03	Valid	03	5	83.3
		05	1	16.7
		Total	6	100.0
04	Valid	04	37	100.0
05	Valid	05	61	100.0
06	Valid	04	1	1.2
		06	84	98.8
		Total	85	100.0
07	Valid	07	117	99.2
		XX	1	.8
		Total	118	100.0
08	Valid	XX	2	1.3
		08	149	98.7
		Total	151	100.0
09	Valid	XX	1	.7
		09	140	99.3
		Total	141	100.0
10	Valid	09	1	100.0

Notes on Authors

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